CLAIMS

What is claimed is:

1. A method for auto-exposure control, comprising:

determining a scene location;

setting an exposure length equal to an integer multiple of ½ a period of the AC current typically used at the scene location;

taking at least one exposure of the scene using the exposure length;

determining at least one exposure parameter for the scene using the at least one exposure.

2. The method of claim 1 where the scene location is determined by user input.

3. The method of claim 1 where the scene location is determined by a GPS device.

4. The method of claim 1 where the exposure parameter comprises an exposure length.

5. The method of claim 1 where the exposure parameter comprises an aperture size.

6. The method of claim 1 where the exposure parameter comprises a gain factor.

7. A method for auto-exposure control, comprising:

determining a presence of artificial illumination in the scene;

determining a frequency of intensity variations in the scene;

synchronizing an exposure rate with the frequency of intensity variations in the scene;

taking at least one exposure of the scene at the synchronized exposure rate;

determining at least one exposure parameter for the scene using the at least one exposure.

8. The method of claim 7 where the presence and frequency of the artificial illumination is determined by user input.

9. The method of claim 7 where the presence and frequency of the artificial illumination is determined by measuring the light from the scene for periodic changes.

10. The method of claim 9 where the periodic changes are variations in brightness.

11. The method of claim 9 where the light from the scene is focused onto a photo sensor and the periodic changes are variations in contrast.

12. The method of claim 7 where the frequency of the artificial illumination is determined by the geographic location of the scene.

13. The method of claim 7 where the exposure parameter comprises an exposure length.

14. The method of claim 7 where the exposure parameter comprises a gain factor.

15. The method of claim 7 where the exposure parameter comprises an aperture size.

16. The method of claim 7 further comprising:

taking a final exposure, using the exposure setting, at the synchronized exposure rate.

17. The method of claim 7 further comprising:

taking a final exposure, using the exposure setting, where the final exposure is centered at a cross-over point in the intensity variations.

18. A method for auto-exposure control, comprising:

predicting at least one frequency for a variation in the illumination in the scene;

measuring light from the scene at a periodic rate, where the periodic rate is different than any of the predicted frequencies, using an exposure length that is different than any of the periods of the predicted frequencies;

detecting the presence of an artificial illuminant when the measured light from the scene contains periodic changes;

determining the phase and frequency of the periodic changes with FFT analysis of the sampled light;

synchronizing an exposure rate with the frequency of the intensity variations in the scene;

taking at least one exposure of the scene at the synchronized exposure rate, the at least one exposure having an exposure length;

determining at least one exposure parameter for the scene using the at least one exposure.

19. The method of claim 18 where the exposure length is centered at a crossover point in the intensity variations.

20. The method of claim 19 where a final exposure is taken, using the exposure parameter, and the final exposure is centered on a crossover point in the intensity variations.

21. A method for auto-exposure control, comprising:

predicting a frequency for a variation in the illumination in the scene;

measuring light from the scene at a periodic rate using a first exposure length that is equal to the period of the predicted frequency;

re-measuring light from the scene at a periodic rate using a second exposure length that is equal to the period of a second predicted frequency;

determining the presence and frequency of the variation in the illumination in the scene when the variability of the measurements using the first exposure length is different than the variability of the measurements using the second exposure length;

synchronizing an exposure rate with the frequency of the intensity variations in the scene;

taking at least one exposure of the scene at the synchronized exposure rate, the at least one exposure having an exposure length;

determining at least one exposure parameter for the scene using the at least one exposure.

22. An apparatus for auto-exposing a scene comprising:

a means for measuring light from the scene at a periodic rate using a predetermined exposure time;

a means for determining the presence and frequency of intensity variations from an artificial illuminant by examining the measured light from the scene for periodic intensity variations;

a means for determining exposure parameters for the scene synchronized with the frequency of intensity variations.

23. A digital camera comprising:

a photo sensor array, the photo sensor array configured to measure light from a scene at a periodic frequency using a predetermined exposure length;

a lens configured to focus the light from the scene onto the photo sensor array;

a processor, the processor configured to determine the frequency of intensity variations in the illumination of the scene by examining the measured light from the scene for periodic contrast variations, the processor also

configured to synchronize at least one exposure, used in an auto-exposure control, to the intensity variations in the scene.

24. The digital camera of claim 23 where a final exposure is taken synchronized to the intensity variations in the scene.

25. A method for auto-exposure control, comprising:

determining a presence of artificial illumination in the scene;

determining a period of intensity variations in the scene;

setting an exposure length equal to an integer multiple of the period of the intensity variations in the scene;

taking at least one exposure of the scene using the exposure length;

determining at least one exposure parameter for the scene using the at least one exposure.

26. The method of claim 25 where the presence and period of the artificial illumination is determined by user input.

27. The method of claim 25 where the presence and period of the artificial illumination is determined by measuring the light from the scene for periodic variations.

28. The method of claim 27 where the periodic changes are variations in brightness.

29. The method of claim 27 where the light from the scene is focused onto a photo sensor and the periodic changes are variations in contrast.

30. The method of claim 25 where the period of the artificial illumination is determined by the geographic location of the scene.

31. The method of claim 25 where the exposure parameter comprises an exposure length.

32. The method of claim 25 where the exposure parameter comprises a gain factor.

33. The method of claim 25 where the exposure parameter comprises an aperture size.

34. The method of claim 25 further comprising:

taking a final exposure, using the exposure setting and using the exposure length.

35. The method of claim 25 further comprising:

taking a final exposure, using the exposure setting, where the final exposure is centered at a cross-over point in the intensity variations.